GALGOTIAS UNIVERSITY

| ADMISSION NUMBER | | | | | | | | | | | | |
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# School of Engineering

**B.TECH Mechanical Engineering in E-Vehicles and Autonomous Vehicles**
**Mid Term Examination - May 2024**

**Duration : 90 Minutes**
**Max Marks : 50**

**Sem VI - G3UC604C - EV-HEV Power Train**

*General Instructions*
*Answer to the specific question asked*
*Draw neat, labelled diagrams wherever necessary*
*Approved data hand books are allowed subject to verification by the Invigilator*

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|---|---|---|---|
| 1) | What is the role of phase change materials in an EV? | K2 | (2) |
| 2) | Explain the current market trends with respect to EV adoption. | K1 | (3) |
| 3) | Outline the function of an invertor in an EV powertrain. | K2 | (4) |
| 4) | Interpret the role of ultracapacitors play in the energy storage in an EV. | K2 | (6) |
| 5) | Explain the process of thermal runaway of a battery. | K3 | (6) |
| 6) | Explain different methods for thermal management of a battery. | K3 | (9) |
| 7) | Examine the merits of using a regenerative braking system in EVs? | K4 | (8) |
| 8) | Explain hydraulic braking system with a schematic diagram. | K4 | (12) |
| | **OR** | | |
| | Explain electric regenerative braking system with a schematic diagram. | K4 | (12) |